AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

1. (previously presented) An in vitro protein or nucleic acid synthesis system comprising:

at least one extract from an E. coli cell having a mutation that results in reduced activity of at least one nuclease, wherein said E. coli cell does not express Gam, wherein said at least one extract is modified by the addition of Gam protein.

2-15. (canceled)

16. (original) The in vitro synthesis system according to claim 1, further comprising at least one nucleic acid template selected from the group consisting of a DNA template and an RNA template.

17. (original) The in vitro synthesis system according to claim 16, comprising at least one DNA template and wherein the in vitro synthesis system is an in vitro transcription/translation system.

18-27. (canceled)

28. (previously presented) The *in vitro* synthesis system according to claim 1, wherein said Gam protein is a soluble Gam protein.

29. (canceled)

30. (previously presented) The in vitro synthesis system according to claim 1, comprising at least one energy source.

31 -40 (canceled)

41. (previously presented) A kit for *in vitro* synthesis comprising:

at least one extract from an E. coli cell having a mutation that results in reduced activity of at least one nuclease, wherein said E. coli cell does not express Gam, wherein said at least one extract is modified by the addition of Gam protein; and

one or more nucleotides or derivatives thereof, one or more amino acids or derivatives thereof, one or more polymerases, one or more cofactors, one or more buffers or buffer salts, one or more energy sources, one or more nucleic acid templates, or one or more reagents to determine the efficiency of the kit or assay.

42-50. (canceled)

51. (previously presented) A composition comprising:
at least one extract from an E. coli cell having a mutation that results in reduced activity of at least one nuclease, wherein said E. coli cell does not express Gam, wherein said at least one extract is modified by the addition of Gam protein, and

at least one nucleic acid template in the presence of at least a partial synthesis product of said template.

52. (original) The composition according to claim 51, wherein the product is a nucleic acid product.

53. (original) The composition according to claim 52, wherein the nucleic acid product is a DNA.

54. (original) The composition according to claim 52, wherein the nucleic acid product is a RNA.

55. (previously presented) The in vitro synthesis system of claim 30, comprising at least two energy sources.

56. (canceled)

57. (previously presented) The kit of claim 41, comprising at least two energy sources.

58-59. (canceled)

60. (previously presented) The composition of claim 51, further comprising at least two energy sources providing chemical energy for synthesis.

61. (previously presented) The *in vitro* protein or nucleic acid synthesis system of claim 1, wherein said nuclease is a DNase.

62. (previously presented) The *in vitro* protein or nucleic acid synthesis system of claim 61, wherein said DNase is exonuclease I, exonuclease II, exonuclease III, exonuclease IVA, exonuclease IVB, RecBCD (exonuclease V), exonuclease VII, exonuclease VIII, RecJ,

dRpase, endonuclease I, endonuclease III, endonuclease IV, endonuclease V, endonuclease VII, endonuclease VIII, endonuclease A, fpg, uvrABC, mutH, vsr endonuclease, ruvC, ecoK, ecoB, mcrBC, mcrA, mrr, topoisomerase I, topoisomerase II, topoisomerase III, or topoisomerase IV.

63-68. (canceled)

69. (previously presented) The kit of claim 41, wherein said nuclease is a DNase.

70. (previously presented) The kit of claim 69, wherein said DNase is exonuclease I, exonuclease II, exonuclease III, exonuclease IVA, exonuclease IVB, RecBCD (exonuclease V), exonuclease VII, exonuclease VIII, RecJ, dRpase, endonuclease I, endonuclease III, endonuclease IV, endonuclease V, endonuclease VII, endonuclease VIII, endonuclease A, fpg, uvrABC, mutH, vsr endonuclease, ruvC, ecoK, ecoB, mcrBC, mcrA, mrr, topoisomerase I, topoisomerase II, topoisomerase III, or topoisomerase IV.

71-76. (canceled)

77. (previously presented) The composition of claim 51, wherein said nuclease is a DNase.

78. (previously presented) The composition of claim 77, wherein said DNase is exonuclease I, exonuclease II, exonuclease III, exonuclease IVA, exonuclease IVB, RecBCD (exonuclease V), exonuclease VII, exonuclease VIII, RecJ, dRpase, endonuclease I, endonuclease III, endonuclease IV, endonuclease V, endonuclease VII, endonuclease VIII, endonuclease A, fpg, uvrABC, mutH, vsr endonuclease, ruvC, ecoK, ecoB, mcrBC, mcrA, mrr, topoisomerase I, topoisomerase II, topoisomerase III, or topoisomerase IV.

79-84. (canceled)

85. (previously presented) The in vitro synthesis system according to claim 55, wherein each of the at least two different energy sources generates or regenerates high energy triphosphate compounds for the synthesis.

86. (previously presented) The in vitro synthesis system according to claim 85, wherein the at least two different energy sources are selected from the group consisting of pyruvate, phosphoenolpyruvate (PEP), carbamoyl phosphate, acetyl phosphate, creatine phosphate, phosphopyruvate, glyceraldehyde-3-phosphate and glucose-6-phosphate.

87. (previously presented) The in vitro synthesis system of claim 86, wherein two of the at least two energy sources are phosphoenol pyruvate and acetyl phosphate.

88-90. (canceled)

91. (previously presented) The kit of claim 57, wherein each of the at least two different energy sources generates or regenerates high energy triphosphate compounds for the synthesis.

92. (previously presented) The kit of claim 91, wherein the at least two different energy sources are selected from the group consisting of pyruvate, phosphoenolpyruvate (PEP), carbamoyl phosphate, acetyl phosphate, creatine phosphate, phosphopyruvate, glyceraldehyde-3-phosphate and glucose-6-phosphate.

93. (previously presented) The kit of claim 92, wherein two of said at least two energy sources are phosphoenol pyruvate and acetyl phosphate.

94. (previously presented) The composition of claim 60, wherein each of the at least two different energy sources generates or regenerates high energy triphosphate compounds for the synthesis.

95. (previously presented)The composition of claim 94, wherein the at least two different energy sources are selected from the group consisting of pyruvate, phosphoenolpyruvate (PEP), carbamoyl phosphate, acetyl phosphate, creatine phosphate, phosphopyruvate, glyceraldehyde-3-phosphate and glucose-6-phosphate.

96. (previously presented) The composition of claim 95, wherein two of said at least two energy sources are phosphoenol pyruvate and acetyl phosphate.